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ABSTRACT

The seventh in a series of nine career education guides contains four unit plans for grades 7-12. In general each unit presents goals, objectives, measuring devices, activities, instructional materials or resources, careers appropriate to the unit. a multimedia bibliography, and a unit evaluation form for teachers. Part one is a foreign language unit which also includes appendixes on the classroom teacher's planning cycle for career awareness in foreign language instruction, and an article entitled "Foreign Languages for Everyone: Communication and Vocation" reprinted from the FLACS newsletter. Part two is a science unit on careers in science, health, agribusiness, and environmental fields related to genetics. Part three is a unit on health careers which focuses on community health assisting. Part four is a science and health unit on living space and its effect on individiuals' lives. (JR)

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CAREER EDUCATION

GRADES 7-12

FOREIGN LANGUAGE

TALK YOUR WAY AROUND THE WORLD

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

CE00 3956

CAREER EDUCATION

PROJECT: Tri BOCES Planning and Development of a Comprehensive Career Education Program K–12

REGION: Cayuga BOCES
Cortland–Madison BOCES
Tompkins–Seneca–Tioga BOCES

McEvoy Educational Center
Cortland–Madison BOCES
Cortland, New York 13045

1974

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FOREWORD

In a Career Education program, each student is provided with tools and/or information to help him develop a sense of self-awareness, to become cognizant of his abilities, temperaments, aspirations, goals, values, interests and needs in order to make realistic choices in the many career options available to him in the world of work.

The material developed in this unit was based on this premise with the goal of infusing these ideas into the present curriculum.

Career Education is a facet of education that can be related to the whole student and thus provide a vehicle to help youth prepare for the future and implement decisions that will hopefully lead to a rewarding and successful life.

G. Douglas Van Benschoten
Career Education Manager

INTRODUCTION

This module, adaptable to all modern languages, should clarify teacher and student expectations in the field of bi-lingual career opportunities. Therefore, the career relevancy of foreign languages is the major thrust of this module.

The specific area studied is the field of travel. French is used as an example but all activities might be adapted to other modern languages taught.

Read through the entire module and select those activities which are best suited for the language proficiency of your class or use the suggested activities to build new vocabulary.

It is intended that this module be included in all activities throughout the school year.

PROFESSIONAL PROJECT STAFF

Diane Davis	Auburn High School Auburn, New York
Ellen Hepfer	Homer Junior High School Homer, New York
G. Mason Morenus	Cortland Senior High School Cortland, New York
Margaret A. Parmelee	Lansing Central School Lansing, New York
Pamela Willis	Cincinnatus Elementary School Cincinnatus, New York

Cover by Robert Gerlach - South Seneca Central School

Subject Area:

Modern Foreign Languages

Topic:

Practical Application of Foreign Languages

Title:

Talk Your Way Around the World in French, Spanish, German, Russian. The Potentials for Use of Foreign Languages in Careers Today.

Suggested Grades:

7 - 12

Career Goal:

The student will become aware of the bi-lingual careers in the field of travel.

Career Goals:

Educational Awareness;

To enable student to recognize that learning is a continuous process in and outside of school.

Career Awareness:

A.

To enable student to relate occupations to needs and functions of society. Ex. tour guide provides needed help to people who need travel experiences for business or relaxation.

B.

Student will contrast variety of occupations for bi-lingual persons found in world of work.

(concepts to be transmitted:)

1. personal/psychological value of work dealing closely with other persons.
2. develop an awareness in the students that they have many abilities and talents that are needed.

Economic Awareness:

To enable student to compare range of social and economic benefits associated with being a tour guide. Ex. tour guide is a leader; tour guide is well paid; tour guide has opportunities to broaden his own horizons.

*Career Clusters for use of foreign languages in careers.

*see Appendix A

1. Transportation:
   pilot
   navigator
   baggage handler
   flight mechanic supervisor
2. Personal Services:
   travel agent
   airline-bus-train
   flight attendant
3. Public Services:
   security guard
   immigration-customs office
   currency exchange clerk (at airport and bank)
   Federal Aeronautic Agency Inspector
4. Hospitality and Recreation:
   tour guide
   hotel clerk
   restaurant personnel
   hotel security guard

5. Communications and Media

   T.V. news reporter

   radio commentator

   journalist interviewing foreign visitors

6. Business and office

   travel agent

   convention booking manager

Note: several careers may appear in various cluster titles.

Teacher/Student Activities:

1. Provide each student with a list of bilingual careers in field of travel. (Appendix A)
   Ask each student to choose 3 or more career opportunities which appeal to him. Each student tells why he chose the careers which he checked on his list.
2. Provide each student with actual ads for bilingual jobs from N.Y. Times, Montreal Star, or other newspapers available to teacher. *Large cities will have more selection in this respect.

3. Given a game "Qui-suis-je?" Who Am I -students may illustrate importance of a specific bi-lingual occupation.

Touriste:Je chereche la carte de la ville, monsieur
Le guide: Oui, madamoiselle, quelle rue cherchez-vous?
Touriste: Mon ami demeure 55 Rue d'entraigues.
Guide: Voici la carte. Tournez a droite et marchez jusquau coin, traversez la rue. Vous allez voir la rue LaFayette. Continuez dans cette rue. A gauche vous allez voir Rue d'Entraigues. Continuez

Guide (cont'd) jusqu'au numero 55.

Touriste: merci, monsieur, vous etes tres gentil

Guide: a votre service, mademoiselle, c'est un plaisir.

Touriste: Au revoir, monsieur

guide: Au revoir, mademoiselle.

(ans. Je suis dans le Bureau de Renswignements)

4. For a prize, students may create short skits or charade where rest of class must guess occupation being illustrated.
5. Examine a passport
   a. what proof is needed to receive a passport?
   b. what statistics are needed (birth certificate, recent picture, etc.)
   c. why passport is valuable to thieves.
   d. show students actual passport application.
6. Songs :En Passant par la Lorraine (show students where this famous province is located.)
7. Compare clothing sizes from foreign country. "Quelle est votre taille, madamoiselle?" How size 42 compares to size 12 U.S. A.
8. Examine leisure time activities in foreign country that Tour Guide should know about:

   Ex. Summer Tours:

   1. Le Tour de France (famous bicycle race around France)
   2. Championship Tennis Matches

Winter Tours:

ski stations: Chamouix

Boating: Riviera (Nice and Cannes)

Cheese making: Prep. of rouquefort, for example.

Wine Making: (Les Caves)

Plays : La Comedie Francoise, L'Opera, La Theatre Nationale

9. For Tour Guide Career:

   Creation of Itinerary:

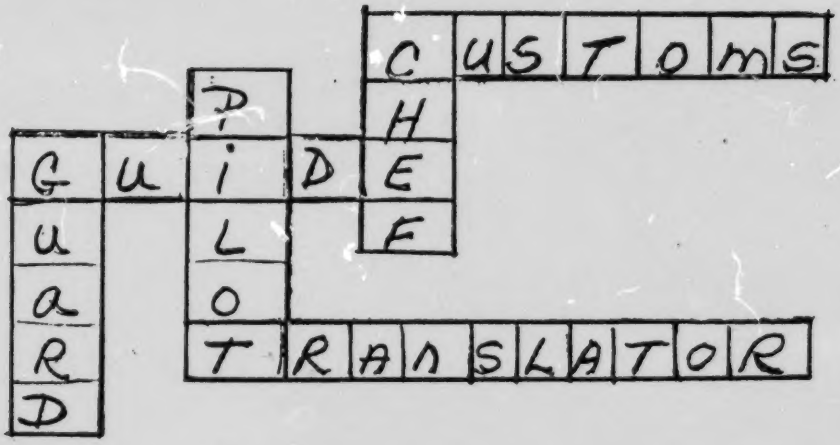
   1. number to be accomodated
   2. age range of group
   3. departure and arrival dates
   4. any specific points of interest chosen for visits by group
   5. Supplementary fees, if any
   6. Shopping areas and times provided.
   7. Sample menus so group may practice ordering in foreign language.

10. Skits pinpointing various points of tour:

   1. on the ground
   2. in the air
   3. on the bus
   4. on the train
   5. at the hotel
   6. at the museum

Activity:

To complete with English meanings;



Across

1. Suivez-moi, sil te plait
2. Voila la douane
4. ca veut dire??

Down

1. Arretez-vous
2. Il dirige l'avion
3. Qui fait la cuisine?

To be adapted in language taught.

11. Have students write the interview sheets for the guest speakers of bi lingual proficiency to include:

Name

age

education

address

birthplace

past experience in for language position

reason for selecting that job

why did they come to U.S.A. (if visitors or foreign born, etc.)

12. Have students create job interview sheets for a specific job requiring a bi-lingual background. Have students interview each other for the positions (individually, panel, small group.....)

Follow-Up Activity:

1. Teacher check up on students' contacts with people engaged in bi-lingual jobs.
2. Building a resource file of speakers with connections with the target area. ex: at Cornell, we have agricultural area visitors from many countries.

   Invite AFS Student, Rotary Exchange Students, other language teachers,

   Community Resource people:

   1. who speak foreign languages
   2. from travel agencies
   3. airport

   to speak to the class about the subject of foreign language, their career training, etc.
3. An independent study project to last three class periods in one week. This is to give students an opportunity to consider possibilities which appeal to them. Ex. do I really like to work with strangers? Am I shy? Would I do a better job as a backroom boy like a translator?

*see reference in bibliography

4. Community Involvement: students, parents, community members, pass a foreign dish supper.
5. Invite an Allegheny Airlines representative to talk about the opportunities for bi-langual students.
6. 1976 is our nation's bi-centennial year. The U. S. therefore, must be ready with more tour guides, hotel men, restaurateurs, telephone information service operators and information clerks

who can direct our visitors with courtesy in language which they can understand.

Have students pretend they are tour guides to foreign visitors and have them give a tour (in the foreign language) of the highlights of their community.

Measuring Devices:

Student interest and motivation to take part in:

1. Role-playing in skits and charades in foreign languages.
2. Student involvement in World Fair of Work activity.
3. Student involvement in helping to bring in speakers from community who have target language and can talk with students about the culture of the country.
4. Student interest in creation of bulletin boards, door posters, etc.
5. Oral proficiency in dialogues and conversation.
6. Written proficiency of interview sheets, reports, bulletin board displays.

Instructional Materials:

1.Bulletin board (constantly revised)

2.Resource persons:

a. foreign visitors ex. banking personnel at Cornell studying computers.

b. local airlines personnel with bi-lingual qualifications

c. ads from newspapers for bi-lingual employees.

d. Rotary exchange students

3. Job employment applications

a. importance of second language for job

4. Bi-lingual employment ads from a variety of newspapers.

5. Field trips

a. home-stay trips with experiment in International Living in Canada, Guadeloupe, Haiti, France or other country of target language.

b. summer exchange (1 month country of target language, 1 month in U.S.A.) through FACETS, New York City.

c. United Nations, Guide Service and translators.

d. visit to local airport

6. Graphic material
   a. pictures
   b. travel folders and posters in both languages

7. Visit to 3 local travel agencies:
   a. cook-gourmet
   b. stone
   c. Gulliver's

Teachers' expectancies at end of unit:

1. Student is aware of actual opportunities for bi-lingual persons.
2. World of Work Fair, school-wide participation and or Chamber of Commerce.

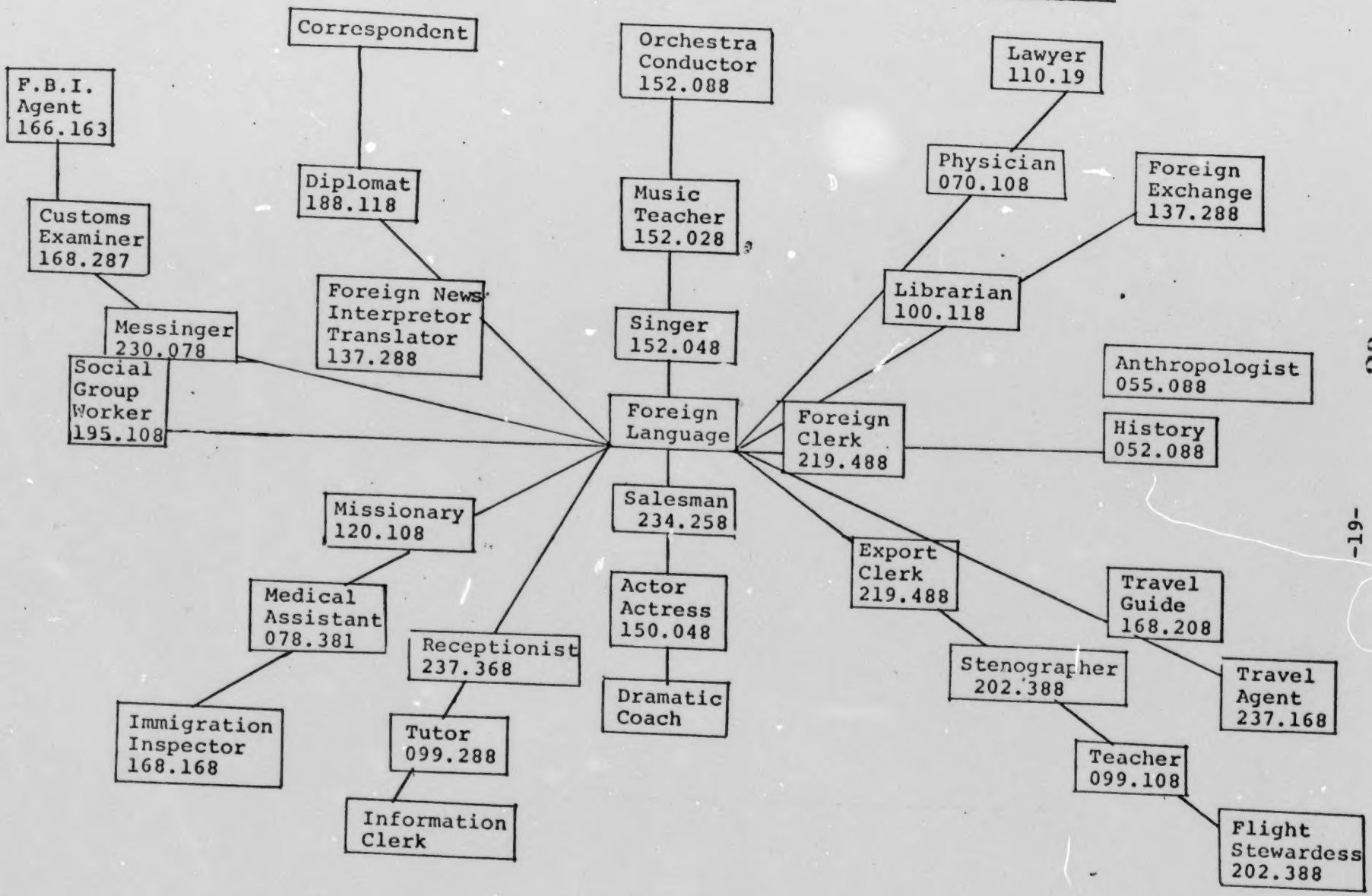
Bibliographical Resources

*Available at Cayuga BOCES Career Library

1. Dictionary of Occupational Titles, U. S. Dept. of Labor 3rd edition.
2. Dowdell, Dorothy and Joseph, Your Career in the World of Travel, Messner, N.Y. 1971
3. Randall, Lyman, Your Future as an Airline Steward/Stewardess
4. Turner, David, Air Traffic Controller
5. Modern Language Journal, April 1974 Vol. LVIII # 4, Career Education and its Implications at the National Level
6. Colvert, Robert, Your Future in International Service, Rosen Press, N.Y., 10010 ESEA II
7. Rural Districts' Career Concept Focus Plan, Independent Study Week , Dr. Kenneth Nye and James Ippolito 1973. (available at McEvoy Education Center of Boces, Cortland)
8. Sound Film Strip A 610-5
9. Hendry, J.F. Your Future in Translating and Interpreting Rosen Press, New York 1969

Jobs from Dictionary of Occupational Titles - 3rd Edition

APPENDIX A



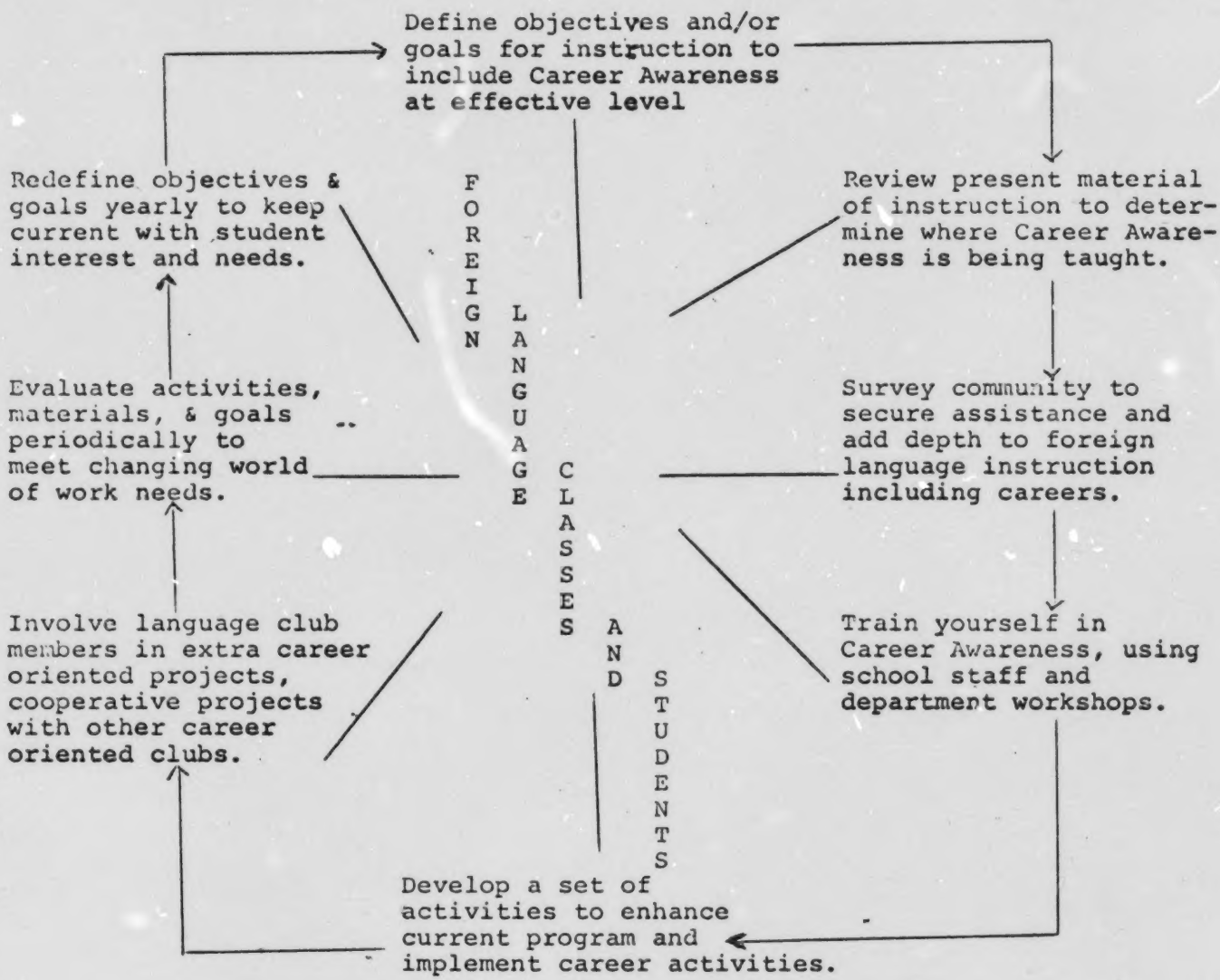
APPENDIX B

CAREERS RELATED TO FOREIGN LANGUAGES

Level	Service	Business Clerical and Sales	Science & Technology	Outdoor	General Culture	Arts and Entertainment
I B.A. or Above	Diplomat Curator Missionary	Tour Conductor Commercial Attache Branch Manager Airways Corp.	Translator of technical writings Physician Nurse Engineer Geologist Archeologist Architect Pharmacist		College Language Teacher Writer Foreign Language Paper Foreign Correspondent High School Language Teacher	Opera Singer Critic Actor
II H.S. plus Technical	Language Librarian Steward or Stewardess Receptionist	Dealer Foreign books Secretary, Bilingual Travel Bureau Manager Foreign Service Worker Fashion Buyer	Wireless Operator Researcher		Broadcaster	Art Collector
III H.S. Graduate	Interpretor Translator Customs Inspector Immigration Inspector Traveling Companion	Foreign Clerk Foreign Collection Clerk Exporter Importer		Policeman		
IV Less than H.S. Grad.	Hotel Worker	Hotel Clerk Armed Forces Merchant Marine Information Aide Courier		Taxi Driver		

APPENDIX C

THE CLASSROOM TEACHER'S
PLANNING CYCLE FOR CAREER AWARENESS
IN FOREIGN LANGUAGE INSTRUCTION


Define objectives and/or goals for instruction to include Career Awareness at effective level
Review present material of instruction to determine where Career Awareness is being taught.
Survey community to secure assistance and add depth to foreign language instruction including careers.
Train yourself in Career Awareness, using school staff and department workshops.
Develop a set of activities to enhance current program and implement career activities.
Involve language club members in extra career oriented projects, cooperative projects with other career oriented clubs.
Evaluate activities, materials, & goals periodically to meet changing world of work needs.
Redefine objectives & goals yearly to keep current with student interest and needs.
FOREIGN LANGUAGE CLASSES AND STUDENTS

ie

Derivation of words having occupational significance.
Original dialogues of workers in related occupations in a foreign country.
Bulletin boards of career using a language.
Pen pals and exchange student background on need of languages in their country.
Development of a Careers and You class newspaper or language feature articles in present school newspaper.

APPENDIX D

FOREIGN LANGUAGES FOR EVERYONE: COMMUNICATION AND VOCATION

FLACS Newsletter (New York) - Winter, 1973

We are living in a complex world in which people from different countries have to communicate with each other--and they don't all speak English.

Most people in the world speak French, Spanish, German, Arabic, Bengali, Russian, Chinese, Japanese, Portuguese, Hindustani or Italian. The American businessman, professional or government employee who wants to understand more deeply what is happening in and to our world must be able to speak more than English. In fact, knowledge of at least one FL is the key to success in hundreds of businesses and professions ranging from banking and selling to teaching and social services.

Economic and social contacts between the United States and other countries are increasing daily. Several thousand U.S. coprorations do business with foreign countries and government agencies have personnel throughout the world.

The increasing complexity and variety of our contacts with other nations and with minority language groups within the United States have created a critical need for trained persons in many professions who know how to communicate in another language and understand another culture. Persons with bilingual skills are needed as social service caseworkers, stenographers, invoice clerks, university and secondary teachers, salesmen, journalists, technical writers, banking trainees, translators, interpreters, librarians and bookkeepers.

Some occupational opportunities:

A. Federal Agencies
Patent office (translators skilled in science, math and engineering) FBI (translators) AID (teacher exchange), Nat'l Security Agency, Institute of Inter American Affairs (health, sanitation, hospital administration, agriculture, education), CIA and IRA (translators), Library of Congress (half of employees need some knowledge of FL for ordering publications, cataloguing and research), Pan American Union, Peace Corps (7,000 members use at least one FL), USIA for Voice of America (TV, films, press, overseas librarians, cultural affairs), Department of Defense (teachers, administrators, education specialists).

B. Federal Government Departments
Dept. of Agriculture (cultural attaches: special need for Danish, Swedish and Serbo-Croatian), Dept. of Commerce (economists in 40 languages), Bureau of Standards to translate contracts, scientific translators especially in science in Chinese and Russian, HEW and USOE, Dept. of Justice (immigration), Dept. of State (FSI, diplomatic and consular duties), Dept. of Treasury (economists to do fiscal and financial research, port inspectors, claims settlement, Bureau of Narcotics).

C. United Nations
Interpreters, translators, verbatim reporters, bilingual secretaries, guides, clerks (usually English plus French/Spanish).

D. Non-Government Organizations
Red Cross, church missions, YMCA (social workers, nurses, field directors, recreation leaders). American Council of Learned Societies, American Friends Society, Asia Corporation, Ford Foundation, Free Europe, Inc., Institute of International Education.

E. Private Business

The demand of private businesses for persons with a knowledge of FLs has increased greatly during the past few years. In fact, 3,300 U.S. corporations control and operate over 8,500 foreign business enterprises worth over 32 billion dollars. More than 1/3 is in Canada, 1/3 in Latin America and about $5 billion is invested in Europe. There are positions in the fields of publishing and editing, translating, journalism, advertising, transportation, hotels, banking, import-export, manufacturing and mining, librarians, linguists, radio broadcasters and teachers. A survey of want ads in the NY Times of six successive Sunday editions showed nearly 1,000 requests for persons with a knowledge of one or more FLs: 382 men/605 women with a knowledge of Spanish, French, German or Italian.

In addition to the material advantages of knowing another language, there is the enjoyment which comes with being able to talk to a German in his own language or watching a French movie without having to read the subtitles. A second language opens literally thousands of doors into a new and exciting world which the monolingual can never really appreciate. It is very difficult to describe the feeling of accomplishment that comes from being able to read a Portugues newspaper, to enter a Mexican restaurant and talk to the waiter in Spanish or to read a novel in Italian and discover that the English version was badly translated. Such use of a language skill, regardless of whether you make a living with it, can be enjoyed everywhere.

Furthermore, in an era of intensive communications, a proper understanding of what the other fellow is saying can be almost literally a matter of peace or war. A statement made in Paris or Moscow is read a few minutes later in the U.S. and who knows whether it is correctly translated? A member of the Board of Directors of the NEC recently told of his feeling of absolute power when he served as Italian translator during the war. He could have said anything he wanted with no fear of contradiction. Common foreign words often seem the same as English words but they may mean something quite different. A person who acquires a second language has a kind of knowledge which is critical to international understanding.

If we are agreed on the last statement about a second language, the obvious question arises: who should then take a FL: the elite few or should languages be offered to all and perhaps even required of all, as happens in Eurpoe? The National Assn. of Secondary School Principals in 1959 said: "All students should have the opportunity to elect FL study and to continue it as long as their interest and ability permit. Whether or not they are planning to go to college. This recommendation takes into account curriculum adaptations which seem indispensable in the light of present and future needs. At a time when events everywhere in the world can produce immediate and profound repercussions on our everyday life, when decisions in the country involving other world areas are commonplace and when an individual from any part of the country may find himself dealing with non-English speaking peoples, some experience with another modern language and some understanding of another modern culture become extremely important."

Would they have the courage to repeat that statement today?

Excerpted from a speech by
Dr. Joseph A. Tursi, AATG Symposium
12 January, 1973, Hofstra University

EVALUATION REACTION FORM

FOR

CAREER EDUCATION MODULES

Tri-Boces

Cayuga, Cortland-Madison, Tompkins-Seneca-Tioga

Instructor's Name: _____

School District: _____ Building: _____

Module Title: _____

Unit Title: _____

Grade Level: _____ Number of Students: _____

1. From the three sections listed below relating to the module, please check any section that you felt was a problem and comment on the problem experienced.

   Suggested Instructional Activities:

   Follow-up Activities:

   Resource Materials:

   Comments:

2. How did you evaluate the students in the module?

3. If you used an evaluation devise with the students, please forward it with this report.

4. If you made any changes in this module or feel changes should be made, please indicate briefly what changes you recommend.

5. How many teaching days and/or teaching periods did you use the modules relating to Career Education.

6. What community resources were used in presenting material?

7. Did you use resource people? If so, please indicate career represented, not names.

8. Did you go on field trips? If so, please indicate names and places.

COMMENTS:

Please return to: G. Douglas Van Benschoten
Cortland-Madison BOCES
Clinton Avenue Extension
Cortland, New York 13045

CAREER EDUCATION

SCIENCE - GRADES 7-12

GENETICS AND EUGENICS

CAREERS IN SCIENCE THROUGH GENETICS

D

N

A

LAB AIDE

BIOCHEMIST

ENVIRONMENTALIST

GENETICIST

SCIENCE FICTION WRITER

PLANT BREEDER

TEACHER

COUNSELOR

FARMER

ILLUSTRATOR

CE00395C

CAREER EDUCATION

PROJECT: Tri BOCES Planning and Development of a Comprehensive Career Education Program K–12

REGION: Cayuga BOCES
Cortland–Madison BOCES
Tompkins–Seneca–Tioga BOCES

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FOREWORD

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G. Douglas Van Benschoten
Career Education Manager

PROFESSIONAL PROJECT STAFF

Hilda Monaghan	St. Mary's School Cortland, New York
Judy Nommik	Cortland-Madison BOCES Cortland, New York
Julienne Webster	Cortland-Madison BOCES Cortland, New York

Cover by Robert Gerlach - South Seneca Central School

INFORMATION

While genetics began with Mendel viewing an organism as a collection of traits, each separately inherited, today this field has expanded to become inter-related with many other branches of science. New specialties have emerged to make the science of heredity a very complex one.

There are three main genetic areas to be considered in this module: transmission genetics, physiological genetics, and population genetics. Hopefully this study will create an awareness of the role in the development of the individual and populations, and also facilitate the student's exploration of career possibilities in science, health, agri-business, and environmental fields as related to genetics.

Subject Area:

Genetics and Eugenics

Suggested Grade Level:

7-12

Subject Goals:

The student will be able to:

1. acquire a basic genetic vocabulary.
2. discuss fundamental genetic relationships.
3. demonstrate a practical application of heredity.

Behavioral Objectives:

1. Given a list of twenty-five words, the student will be able to correctly define twenty genetic terms.
2. With 90% accuracy, the student will compute resulting ratios to demonstrate Mendel's laws, using a teacher-made worksheet.
3. The student will write a list of traits inherited in man, selecting three located on the sex chromosome, ten on the autosomes, and determining whether they are dominant or recessive.
4. Given two traits by the teacher, the student will demonstrate inbreeding and outbreeding used by a breeder to produce a desirable organism.
5. The student will construct and label the DNA molecule, explaining with accuracy how a mutation may arise.
6. In a two hundred word essay, the student will write a report on population genetics.

7. In a written report, the student will demonstrate the inter-relationships of ten possible careers that have resulted from genetic research.
8. Given an example of gene mutation, the student will demonstrate by Punnett Squares how man's environment has been changed.

Career Goals:

1. The student will understand, accept, and respect his own uniqueness as a result of learning, growth, and maturation.
2. The student will recognize that different career directions require varying types of educational preparation.
3. The student will understand the variety of occupations found in the world of work.
4. The student will recognize individual differences and become tolerant in his interpersonal relationships.

Career Clusters:

Health, Agri-Business and Natural Resources, Environment.

Measuring Devices:

1. Given the following vocabulary words, the teacher will select any twenty-five to use in a written or oral test.

   alleles, autosomes, chromosome, chromatid, deletion, DNA, dihybrid, dominant, Downe's Syndrome, genepool, genotype, homozygous, hybrid, heterozygous, inbreeding, inversion, linkage, multiple alleles, mutation, nucleotide, non-disjunction, outbreeding, PKU, phenotype, polyploidy, population genetics, recessive, replication, species.

2. Using a blackboard or overhead projector, the student will proficiently work out any five Mendelian ratios.
3. The student will write an explanation of genetic coding. Diagrams may be used wherever necessary.
4. The student will observe family traits such as eye color or hair color, and make a pedigree chart to show his own possible inherited genes.
5. The student will orally list and discuss the factors necessary to the Hardy-Weinberg equilibrium, and orally list and discuss the factors that increase variability.
6. The student will describe any three occupations directly concerned with or associated with genetics.

Teacher/Student Activities:

1. Panel discussion
   A. External Effects on Chromosomes, i.e. drugs, radioactivity, chemicals.

B. The Effect of Heridity and Environment on I.Q.

C. Are Genetic Mutations Responsible for Evolution?

2. Class discussion:

   Should Man Manipulate Populations?

3. Brainstorm an actual problem:

   A. Eradication of the sting of bees.

   B. Genetic Family Disease.

4. Small group discussion:

   A. Possible futures through genetic engineering

   B. Construction of a "Six Million Dollar Genetic Man"

   C. What qualities are necessary in a successful scientist?

Role Playing:

1. A research scientist, chemist, and statistician explaining hybrid vigor to a farmer and his helper.
2. A genetic counselor explaining Downe's Syndrome, sickle cell anemia, or hemophilia to prospective parents.
3. The mating of Drosophilia.

Construction Activities:

1. Make posters demonstrating each of Mendel's Laws to present to a sixth grade class. (teaching as a career)
2. Assemble a collage of those careers related to genetics. As a class activity, have each student contribute someone they know who has use of genetic information.
3. Have each student construct a pedigree chart showing his family's traits for tongue rolling, ear lobe formation, P.T.C. tasting as a breeder, or genetic counselor or gynecologist might.

Experimentation:

1. Flip coins to show the laws of chance. Keep a record to show the ratio of heads to tails, as if you were a statistician.
2. If X-ray machines are available (dentist's office, local hospital's X-ray Department) subject drosophilia to X-ray, mate, look for mutations in any future generations. Possible careers: X-Ray technician, aides, experimentalist, seed producers.
3. Plant corn seeds to show examples of dominance. Why is this?
4. Observe corn seeds to discover Mendel's ratios.
5. Culture Bacillus cereus in a sterile petri dish. Use antibiotic disks to discover if some bacteria are resistant. How is this information used by the bacteriologist, geneticist, public health worker, physician.

Resources:

1. Invite any one of the following to speak in the classroom:
   a. Artificial Breeder (Ag Extension)
   b. Genetic Counselor (March of Dimes)
   c. Physician
   d. Genetics Professor
   e. Horticulturist

Ask them to explain how their careers, educational background, etc. came about.

2. Have students interview anyone connected to the field of genetics and report the information to the class. Allow interested students to prepare career profiles of the people interviewed.

Careers Relating to Genetics:

1. Research Scientist
2. Biochemist
3. Statistician
4. Lab Technologist
5. Lab Technician
6. Lab Aide
7. Animal Breeder
8. Plant Breeder
9. Genetic Counselor
10. Physician
11. Farmer
12. Pest Controller
13. Salesperson
14. Science Fiction Writer
15. Secretary (Medical)
16. Librarian (Scientific)
17. Illustrator
18. Teacher
19. Psychiatrist-Psychologist
20. Environmentalist

In a role playing situation:

1. Have the students attempt to solve an actual research problem using any five of the above people to form the research team.
2. Research the occupations, schools available, cost of education, salaries associated with the science of genetics.

Classroom:

1. Read and discuss any unit dealing with genetics.

2. Practice Mendelian ratios using Punnett Squares for Mendel's Laws, sex determination, sex inherited diseases, multiple alleles.
3. List factors for stable gene pools.
4. List factors for variability.
5. Blackboard demonstration or overhead projector to show kinds of chromosome mutations and DNA change.
6. Construct a DNA molecule.

Fun and Creativity:

1. Research aristocratic genealogy to discover incidences of inherited diseases.
2. Construct a "six million dollar genetic man".
3. Write a science fiction story using mutation theory for development of characters.
4. Give a critical book report from any of the following in light of genetic theories:
   A. Brace New World, Aldous Huxley
   B. Rebirth, John Wyndham
   C. Future Shock, E. Tottler

Activity on Cornell letter:

From analysis of enclosed letter, list jobs related to ideas inspired.

Follow-Up

1. Referring back to Discussion Technique # 1, panel discussion on what jobs are possible for A,B,C.

June 6, 1974

Dear Dairyman:

New research is being planned at Cornell and we need your help.

Female calves born co-twins with males are, in the majority of cases diagnosed as freemartins, sterile females and are of no breeding value to the farmer. Therefore, these animals are usually sold as 3 to 7 day old calves. The research now being designed is aimed to determine whether freemartins can be put to a more beneficial use for the farmer. Perhaps freemartins treated non-surgically with different hormones can be used as heat detectors. If animals such as these could be used, it would eliminate the hazard of keeping bulls to check for heat, as well as putting these animals to use that in the past had no real purpose.

We need at least 12 freemartins to conduct our research. This is where you can help. We want to obtain these animals when they are about a week of age from mid-June to August. We will pay the going market price as well as pick up the animal from the farm. If you have a female that is born co-twin with a bull after the middle of June, please call us collect immediately after the birth of the animal at (607) 256-2050.

Thanks for your help in this promising project.

Sincerely yours,

Robert H. Foote
Professor of Animal Science

Carl A. Crispell
Coop. Ext. Agent

cl

P. S. The Cortland County Dairy Promotion Committee is planning an "OPEN BARN DAY" for Sunday, July 14. If you might be interested in opening your barn to visitors from 3-5 p.m. or for the night milking on July 14, please call Jane Potter at (607) 842-6472.

Tompkins Seneca

MOVIES

MS 3	ADAPTIONS OF PLANTS AND ANIMALS
MS 1068	CRACKING THE CODE OF LIFE
MS 189	GENE ACTION
MS 919	GENETICS: MENDEL'S LAW
MS 721	HERIDITY
MS 291	LAWS OF HERIDITY
MS 915	RADIATION IN BIOLOGY: INTRODUCTION

TRANSPARENCIES

132 SCIENCE NO. 21 DNR-RNA STRUCTURE AND REPLICATIONS

2137 SCIENCE: THE GENE CONCEPT

Cayuga County

FILMS

2MP6938 S DNA: MOLECULE OF HEREDITY

TRANSPARENCIES

63	DNA BASIC STRUCTURE
64	DNA CHEMICAL STRUCTURE
66	DNA REPLICATION
67	TRANSFORMED BACTERIA: IN VIVO
68	TRANSFORMED BACTERIA: IN VITRO
69	DETECTING A NUTRITIONAL MUTANT

Cortland

FILMS

C-2395	CRACKING THE CODE OF LIFE	
832-74	HUMAN HERLDITY	JS
833-2018	THREAD OF LIFE	JS

Bibliography

B.S.C.S., Biological Science, An Inquiry into Life, Harcourt, Brace, and World, Inc. 1963.

B.S.C.S., High School Biology, Rand McNally, 1967

B.S.C.S., Biological Science, Molecules to Man, Houghton, Mifflin Co., 1963

Brandwein, P., Beck., A., and others The Earth: Its Living Things, Harcourt, Brace, and World Inc., 1970

Brandwein, P.Burnett. R. and others, Life: Its Forms and Changes, Harcourt, Brace and World Inc. 1968

Kraus and Perkins, Concepts in Modern Biology, Cambridge Book Co.

Watson, J., The Double Helix, The New American Library, 1968

EVALUATION REACTION FORM

FOR

TRI-BOCES CAREER EDUCATION MODULES

Instructor's Name: _____

School District: _____ Building: _____

Module Title: _____

Unit Title: _____

Grade Level: _____ Number of Students: _____

1. From the three sections listed below relating to the module, please indicate which section you felt should be improved and comment on the problem experienced.

   Suggested Instructional Activities:

   Follow-Up Activities:

   Resource Materials:

2. If you used an evaluation device with the students, please forward it with this report.

3. How many teaching days and/or teaching periods did you use the modules relating to Career Education.

4. Please check which of the following resources were used in conjunction with this module.

Community Resources_____ Field Trips_____

5. What did you like about the material presented in this module?

6. How did the students react to material presented in this module?

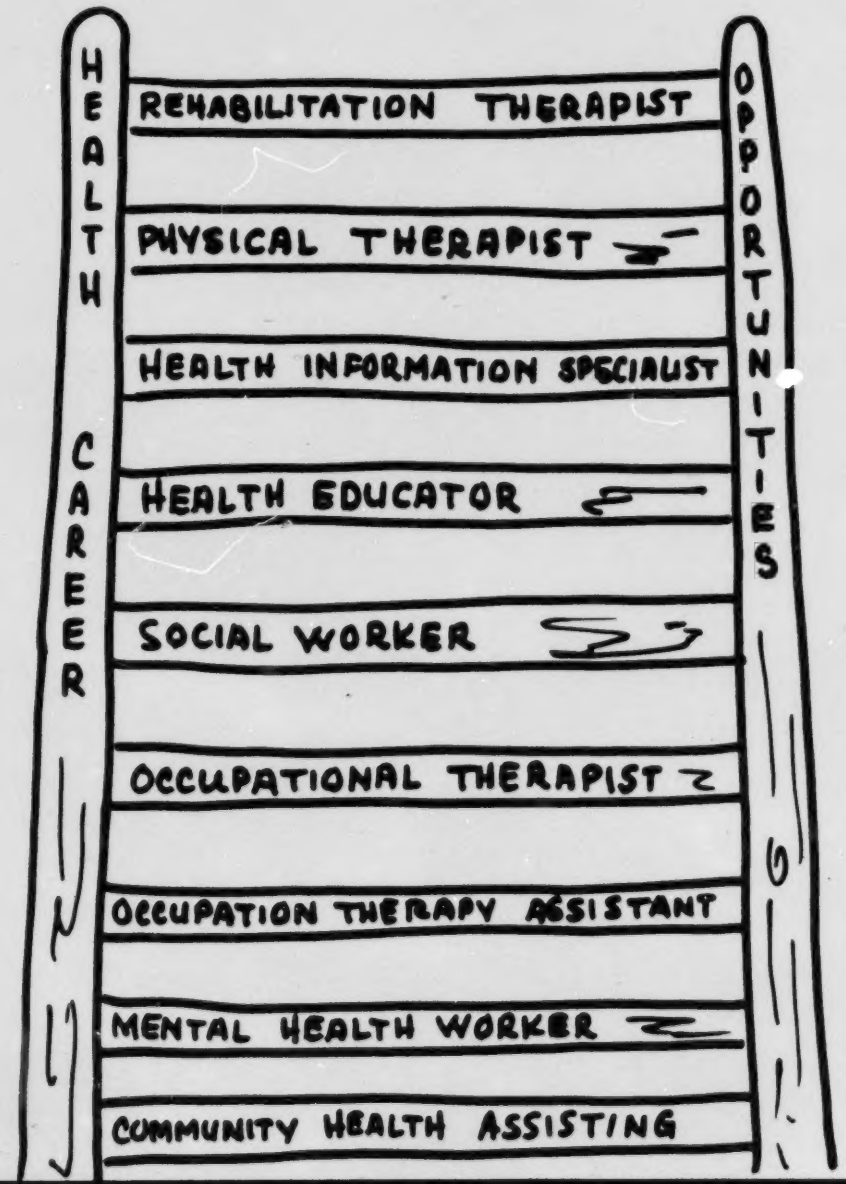
Additonal Comments:

Please return to: G. Douglas Van Benschoten
Cortland-Madison BOCES
Clinton Avenue Extension
Cortland, New York 13045

CAREER EDUCATION

COMMUNITY HEALTH ASSISTING - GRADES 7-12

CAREER LADDER



CE003956

CAREER EDUCATION

PROJECT: Tri BOCES Planning and Development of a Comprehensive Career Education Program K–12

REGION: Cayuga BOCES
Cortland–Madison BOCES
Tompkins–Seneca–Tioga BOCES

McEvoy Educational Center
Cortland–Madison BOCES
Cortland, New York 13045

1974

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E	Physical Therapist	P
A	Health Information Specialist	P
L	Health Educator	O
T	Social Worker	R
H		T
		U
		N
C	Occupational Therapist	I
A	Occupation Therapy Assistant	T
R	Mental Health Worker	I
E	Community Health Assisting	E
E		S
R		

FOREWORD

In a Career Education program, each student is provided with tools and/or information to help him develop a sense of self-awareness, to become cognizant of his abilities, temperaments, aspirations, goals, values, interests and needs in order to make realistic choices in the many career options available to him in the world of work.

The material developed in this unit was based on this premise with the goal of infusing these ideas into the present curriculum.

Career Education is a facet of education that can be related to the whole student and thus provide a vehicle to help youth prepare for the future and implement decisions that will hopefully lead to a rewarding and successful life.

G. Douglas Van Benschoten
Career Education Manager

PROFESSIONAL PROJECT STAFF

Eve Firra	Ithaca High School Ithaca, New York
Hilda Monaghan	St. Mary's School Cortland, New York
Judy Nommik	Cortland-Madison BOCES Cortland, New York
Julienne Webster	Cortland-Madison BOCES Cortland, New York

Cover by Robert Gerlach - South Seneca Central School

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Cover by Robert Gerlach - South Seneca Central School

Introduction

Today there are more than two hundred careers within the health industry. Many shortages exist with more shortages to follow in the next decade. Health Occupation Education programs have been designed to assist in meeting these growing demands.

This module has been developed to orient the student in community health assisting, as a part of a two year sequence in Health Occupations Education. This program provides experiences for the student interested in working directly with people on an individual basis. Hopefully, the module will create an awareness in the student of the many opportunities which exist in the field of health.

THEME: Community Health Assisting-Health Occupations Education

TOPIC: Assisting with social activities of the discharged patient

GRADE LEVEL: 12

SUBJECT GOALS:

To recognize and demonstrate desirable attitudes and the responsibilities of the community health assistant.

To develop and maintain good interpersonal relationships in the world of work.

To provide basic activity skills necessary for assisting the paraprofessional and the professional working with the rehabilitive patient.

To identify the wide variety of career opportunities in the health industry.

BEHAVIORAL OBJECTIVES:

Upon completion of this module and according to his capability, the student will be able to: (3 from a given list of 5)

a. Identify factors which influence human behavior,

b. Differentiate between physical and social needs (using the Health Career Cluster evaluate 3 careers assosiated with these needs)

c. Provide 3 examples of emotional reactions to stressful situations

d. Demonstrate by teaching 5 activities in the classroom to students as well as in work situations to rehabilitive patients.

e. List 5 careers relative to rehabilitation and the educational requirements for attaining 3 of them.

f. Describe ethical standards necessary for community health assistants.

CAREER ELEMENTS

Self Awareness -

The student will recognize the relationship of his interests, aptitudes, and achievements to the realization of his career goals.

The student will understand and recognize forces such as social, economic, educational and cultural that influence his development.

Educational Awareness -

The student will recognize that educational experiences are a part of his career development.

Career Awareness -

The student will recognize that his career includes progression through developmental stages of educational and occupational experiences.

Economic Awareness -

The student will understand the relationship of his present and anticipated occupational status to economic trends found in his community, state and nation.

Decision Making -

The student will understand that decision making includes responsible action in identifying alternatives, selecting the alternative most consistent with his goals, and taking steps to implement the course of action.

Beginning Competency -

The student will develop the skills required to identify the objectives of a task, specify resources required, outline procedures, perform operations and evaluate the product.

Employability Skills -

The student will recognize the implications of working, with and without supervision, independently and with others.

Attitudes and Appreciations -

The student will recognize individual differences and become tolerant in his interpersonal relationships.

CAREER CLUSTERS

Health

a. Rehabilitation therapist
b. Rehabilitation assistant
c. Occupational therapist
d. Occupational assistant
e. Physical therapist
f. Physical assistant
g. Recreational therapist
h. Recreational assistant
i. Medical social worker
j. Mental health worker
k. Prosthestist
l. Orthotist
m. Health educator
n. Medical secretary
o. Rehabilitation counselor

Marketing and Distribution

a. Prosthetic devices

b. Craft/hobby materials

c. Rehabilitation equipment

Communication and Media

a. Health information specialist

b. Technical writer

c. Science

d. Library service

ACTIVITIES:

Discussion

1. Form a buzz group to discuss the individual needs of an actual patient. Use a tape recorder to provide key points for a later role-playing situation.
2. Prepare a panel discussion using the Career Clusters to evaluate the health careers that involve physical and social needs. Identify those needs that are common to everyone.
3. Brainstorm the problems and solutions encountered by co-worker and supervisor in work situations.
4. As a class discussion determine the ethical standards of behavior for the community health assistant.

Case Study:

1. Cite the problem that a discharged patient might encounter re-entering family living.

2. Provide a list of possible solutions for a hypothetical or actual patient.

Construction

1. Construct a hobby/craft kit to use when visiting and teaching patients.
2. Devise activities/interests check list for a specific patient.
3. Construct a chart of agencies and work experiences for the health assistant and health professionals in any of the following:
   a. Day Care for elderly
   b. Nursing Home
   c. Public Health Department
   d. Mental Health Center
   e. Rehabilitation Department of Hospital... out-patient
   f. Alcohol and Drug Abuse Programs
   g. Veterans Administration Hospital
   h. Child/Adult Psychiatric Hospital
   i. Family Life Centers

Field Trip:

Based on observation of actual facilities ascertain whether the facility lends itself architecurally, aesthetically, conveniently to the rehabilitation needs of the patient. Identify careers that are involved in providing external needs for rehabilitation such as interior decorator, architect, plumber, electrician, housekeeping and maintenance.

Dramatized experience:

Role play patient or personal stressful situation using the various mental mechanism such as:

1. rationalization
2. regression
3. compensation
4. projection
5. fantasy
6. identification
7. self-pity

Keep in mind those careers which would be of assistance to particular problems.

Role play a patient ready for discharge with various paraprofessionals minimizing the patient's in making the transition.

Develop the role of the health assistant, paraprofessional, and professional in coping with patient behavior in the various stages of her rehabilitation.

Role play the reaction of non-health workers to a rehabilitative individual encountering social gatherings for the first time.

Experience outside the Classroom:

1. List the community health-related agencies for implementation of practice and identify preferential areas and occupations.

2. Work with a paraprofessional or professional in any teacher approved agency, using activities and skills practiced in the classroom.

Research:

1. Research and develop a schedule for a discharged patient.
2. Research craft magazines for activities appropriate for the rehabilitative patient.
3. Using a research team, develop a brochure or an advertisement describing the opportunities in any health-related field.

Resources:

1. Use resource persons, such as a college graduate, a registered nurse, a therapist, or a graduate student of Health Occupation Ed. to describe their present employment and give guidelines for continued growth as a community health worker. Have student explain the elements of the career ladder approach.

2. Write a poem or essay and share with the class, using topics such as : Who am I?

   Why do I make the choices I do?

   What would I most like to be?

   What I would do if _____.

3. Interview professional worker, with a patient in mind, to become aware of limitations/expectations of patient.
4. View films for learning or improving skills needed to teach activities to the rehabilitative patient.
5. Visit craft store, taking patient when permissible. Consider the creative, manufacturing, and marketing and distribution careers available in this area.
6. Attend craft session offered by community agencies and take a patient when possible. Be aware of teaching methods being used and identify those which are applicable to most activity teaching sessions of rehabilitative patient.

Measuring Devices:

1. Given a list of health related careers relative to rehabilitation, the student will select one and describe the work involved. She will give the educational requirements for the occupation selected and the traits and attitudes necessary for success in this area. He/she will list 5 professional or paraprofessionals working in the rehabilitative process.

2. The student will orally discuss 5 ethical standards for health assistant behavior.
3. Develop a social activity to be used in an actual work situation. Organize materials and plan of approach to be used with the rehabilitative patient.
3. The student will, by oral or written examination, describe the physical and social needs of patients.
4. Write an essay or poem on the topic, Why I have Selected A Career in a Health Related Field.

Health Careers Resource Directory

Careers with a Future in N.Y.S.

New York State Department of Mental Hygine

44 Holland Ave.

Albany, N.Y.]2208

Careers and Opportunities in the Medical Sciences

Dr. Arthur S. Freese

E. P. Dutton and Co. Inc. 1971

New York

Health Careers Filmstrips, records (or tapes)

Lauren Productions Inc.

PO Box 1542

Burlingame, California 94010 $15

Health Careers Guidebook stock # 2900-0158

Superintendent of Documents

U. S. Government Printing Office

Washington, D. C. 20402 $2.25

Career Opportunities: Health Technician

Edited by Robert E. Kinsinger

J. G. Ferguson Publishing Co.

Chicago, Ill. 1970

Health Career Opportunities in N.Y. State

Health Careers

Box 200

Albany, N.Y. 12201

Health Career Packet

American Hospital Association

840 North Lake Shore Drive

Chicago, Ill. 60611 Free

Occupational Outlook Handbook

Superintendent of Documents

U. S. Government Printing Office

Washington, D. C. 20402 $7.25

Serving More Disabled People Through New Careers in Rehabilitation

National Rehabilitation Association

1522 K Street NW

Washington, D. C. 20026 35¢

Films

Cortland-Madison BOCES

832 230	Batiks You Can Make
832 240	Macrame
832 134	Stitchery
832 135	Weaving

Tompkins-Seneca BOCES

MS 23	Aptitudes and Occupations
H4	Professional Health Specialists
H5	The Health Professions
H7	Areas of Specialization in Health

Additional Resources

ABC's of Occupational Therapy, Channing L. Bete Co., Inc., Greenfield, Mass. 01301

Horizon Unlimited, American Medical Assoc., 535 N. Dearborn. St., Chicago, Ill. 60610

Human Services Technology, R. F. Holler and G. M. DeLong, C. B. Mosby, St. Louis, MO. 1973

Understanding Human Behavior by Mary Elizabeth Milliken, Delmar Publishers, Albany, 1973

FOR

TRI-BOCES CAREER EDUCATION MODULES

Instructor's Name: _____

School District: _____ Building: _____

Module Title: _____

Unit Title: _____

Grade Level: _____ Number of Students: _____

1. From the three sections listed below relating to the module, please indicate which section you felt should be improved and comment on the problem experienced.

   Suggested Instructional Activities:

   Follow-Up Activities:

   Resource Materials:

2. If you used an evaluation device with the students, please forward it with this report.

3. How many teaching days and/or teaching periods did you use the modules relating to Career Education.

conjunction with this module.

Community Resources_____ Field Trips_____

5. What did you like about the material presented in this module?

6. How did the students react to material presented in this module?

Additonal Comments:

Please return to: G. Douglas Van Benschoten
Cortland-Madison BOCES
Clinton Avenue Extension
Cortland, New York 13045

CAREER EDUCATION

SCIENCE-HEALTH GRADES 7-12

LIVING SPACE AFFECTS EACH INDIVIDUAL'S LIFE

CE003955

CAREER EDUCATION

PROJECT: Tri BOCES Planning and Development of a Comprehensive Career Education Program K–12

REGION: Cayuga BOCES
Cortland–Madison BOCES
Tompkins–Seneca–Tioga BOCES

McEvoy Educational Center
Cortland–Madison BOCES
Cortland, New York 13045

1974

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Activities	5
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Follow-Up Activities	7
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FOREWORD

In a Career Education program, each student is provided with tools and/or information to help him develop a sense of self-awareness, to become cognizant of his abilities, temperaments, aspirations, goals, values, interests and needs in order to make realistic choices in the many career options available to him in the world of work.

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G. Douglas Van Benschoten
Career Education Manager

PROFESSIONAL PROJECT STAFF

Lawrence Bach	Ithaca High School Ithaca, New York
Edgar Clemens	Ithaca High School Ithaca, New York
James J. Kassal	Union Springs Central School Union Springs, New York
Joseph Ogrodowski	Cayuga BOCES Auburn, New York

Cover by Robert Gerlach - South Seneca Central School

To the Teacher

Living space affects all living things. The amount of space in which a person works can affect not only how well the job is performed but also the worker's temperament. This module is designed to make students aware of this by actually working in various situations and through class discussions. Please read the following material bearing in mind that modifications or omissions of activities may be made to fit the module to your particular situation.

Subject Area:

Science, Health

Grade Level:

7-12

Subject Goal:

To develop an awareness in the student of how living space affects each individual's life.

Behavorial Objectives:

1. The students will be able to calculate population density given the necessary data for finding area and population data. (This calculation will be done in the metric units of square meters per individual).
2. Students will be able to list two advantages and two disadvantages of working in either a confined space or a large area.

Career Goal:

The student will understand how living space affects his ability to work comfortably.

Career Clusters:

1. Agri-Business and Natural Resources
2. Environment
3. Manufacturing
4. Construction

Career Elements:

1. Self Awareness:

   The student will learn about himself in relation to his environment through understanding and experiencing roles.

2. Career Awareness:

   The student will understand the relationship between career and life-style.

3. Decision Making:

   The student will understand that decision making includes responsible action in identifying alternatives, selecting the alternative most consistent with his needs, and taking steps to implement the course of action.

Activities:

1. Divide the class into small groups. Then, calculate the average surface area per individual (in square meters per person) for:

   a. the world

   b. the entire country

   c. the school district (chief school officers have maps)

   d. the nearest city

   e. the school building

   f. the classroom

2. Discuss the group's findings as they relate to activity #1.

3. Mark off one fourth of the room and have each student measure and calculate, at the same time, the surface area per student. Repeat for three fourths of the room. (Note that the figures 1/4 and 3/4 are meant to give on one hand a very crowded working situation, and on the other hand, a rather

spacious one. It may be necessary to alter these figures somewhat depending on the particular situation with which you are working).

4. Discuss the results of activity #3 with respect to relative ease of working in the two situations and the type of working conditions which they might best live with in the future.
5. Invite a speaker from the county planning board to explain how space considerations are incorporated into zoning, construction, etc. and the types of careers related to space utilization.
6. Invite a speaker from the navy to explain how living space on ships and submarines affects sailors.
7. Invite an architect to class so that he might explain how building functions and designs are related to space considerations.

Measurement Devices:

1. Given a floor plan of a house, the students will calculate the living space per individual based upon the number of people who occupy it. (The calculation should be determined in square meters per person).
2. Following a panel discussion about advantages and disadvantages of working in confined and extended spaces, have the student write an essay in which the student chooses the type of working space he prefers and give two advantages of it and two disadvantages of the opposite situation.

Instructional Materials:

1. A globe

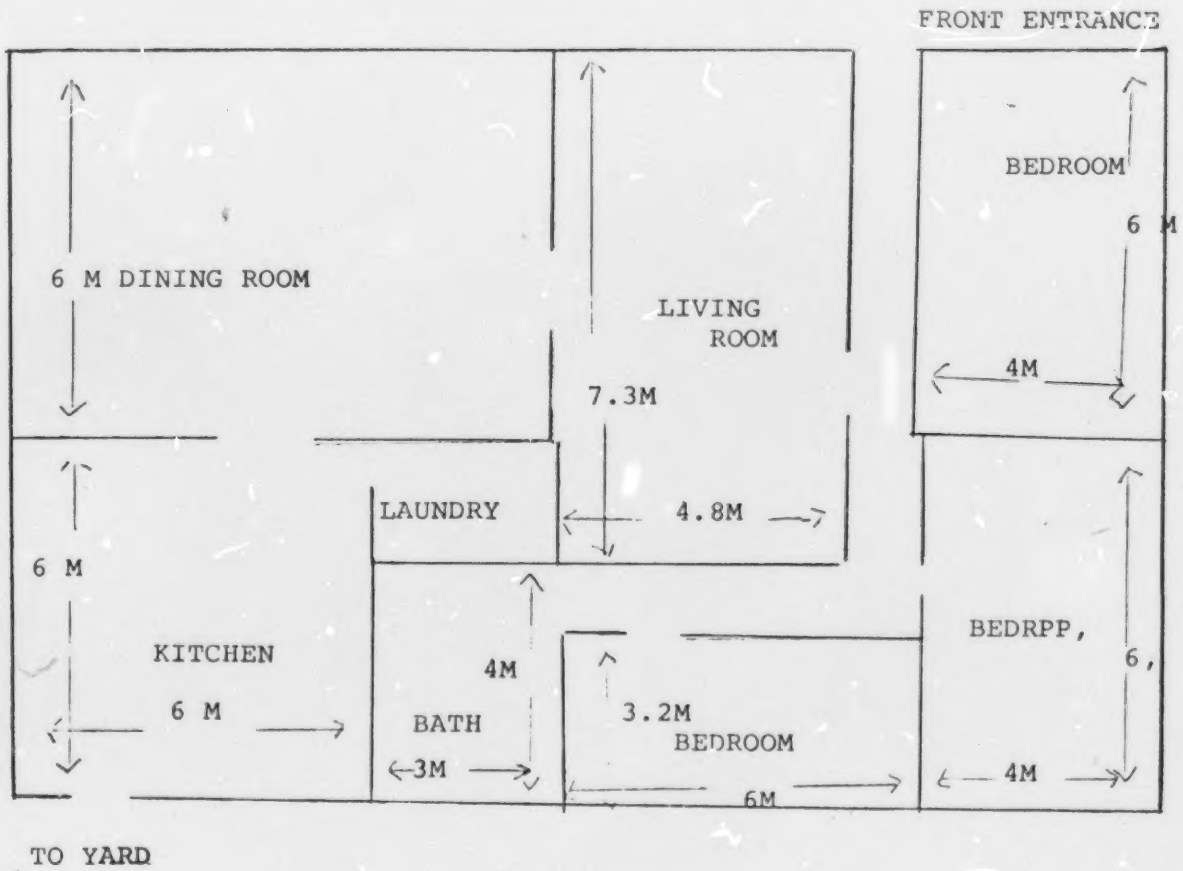
2. an encyclopedia with information on world area and population
3. a map of the school district
4. a map of the nearest city
5. a floor plan of the school building
6. meter sticks (one for each student)

Follow-Up Activities:

1. Have the student measure the floor space in his home. Then, in a class discussion, the students might compare their living spaces at home with their classmates'.
2. Determine the amount of farm land necessary to support one person. In a class discussion, compare this to the average surface area per individual in our country to see how capable our nation is of feeding itself now and in the future.
3. Working as a group, have the class list several occupations with very limited space. (Examples might be bus drivers, airplane hostesses, assembly line workers, etc.) Then in a discussion, have students explain why they would or would not like any of those listed.
4. Have the students study the living space requirements of other living things such as hamsters, dogs, cattle, etc. to see how they compare to each other and to people. (a student developed graph might be a useful visual aid).
5. Have some students visit the local planning board to interview the various people involved in planning the utilization of living space. Then let them report their findings to the class.

Bibliography/Resources:

1. World almanac
2. An up-to-date state map with population of cities and towns
3. The Chief School Administrator (a map of the district and floor plan)
4. A world atlas



SAMPLE FLOOR PLAN - ONE FLOOR HOUSE - 6 PEOPLE IN THE FAMILY

FOR

TRI-BOCES CAREER EDUCATION MODULES

Instructor's Name: _____

School District: _____ Building: _____

Module Title: _____

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conjunction with this module.

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5. What did you like about the material presented in this module?

6. How did the students react to material presented in this module?

Additonal Comments:

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